DOCUMENT RESUME

ED 257 317 FL 015 069

AUTHOR	Gaies, Stephen J.
TITLE	Experimental vs. Non-Experimental Research on Classroom Second Language Learning. Bilingual Education Paper Series, Vol. 5 No. 4.
INSTITUTION	California State Univ., Los Angeles. Evaluation, Dissemination and Assessment Center.
SPONS AGENCY	Office of Bilingual Education and Minority Languages Affairs (ED), Washington, DC.
PUB DATE	Nov 81
NOTE	19p.; Paper presented at the Annual Meeting of the Midwest Regional Teachers of English as a Second Language (1st, Champaign-Urbana, IL, April 3-4, 1981)
PUB TYPE	Viewpoints (120) -- Speeches/Conference Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Classroom Observation Techniques; *Classroom Research; *Error Analysis (Language); Experiments; Feedback; *Research Methodology; Second Language Instruction; *Second Language Learning

ABSTRACT

Aims of classroom-centered research on second language learning and teaching are considered and contrasted with the experimental approach. Attention is briefly directed to methodological problems of experiments, such as controlling classroom events in various ways, and to conceptual weaknesses with study variables. In contrast, classroom-centered research, which involves observation, assumes that the description of classroom activities is a prerequisite to research on second language learning effectiveness and that formal instruction's contribution to language acquisition cannot be studied without measuring actual classroom activity. To illustrate the approaches employed by the experimental study and classroom-centered research, a hypothetical study about teacher correction of learners' errors is considered. Three vital roles played by nonexperimental investigations of the second language classroom are identified: (1) identifying variables whose importance for classroom learning should be investigated experimentally, (2) discerning the unique character of the second language classroom, and (3) developing new conceptualizations of the second language classroom. The view of the classroom largely guiding second language classroom research is that of an interaction between teachers and learners. Alternative views of the classroom have also arisen based on observation and analysis of the second language classroom. (SW)

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ISSN 0161-3707

Vol. 5 No. 4
November 1981

ED257317

Bilingual Education PAPER SERIES

Evaluation, Dissemination and Assessment Center
California State University, Los Angeles
5151 State University Drive
Los Angeles, CA. 90032

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This publication was printed with funds provided by the Bilingual Education Act, Title VII of the Elementary and Secondary Act of 1965, as amended by Public Law 93.380.

EXPERIMENTAL VS. NON-EXPERIMENTAL RESEARCH ON CLASSROOM SECOND LANGUAGE LEARNING*

Stephen J. Gaies

Some people in our field hold, as a matter of absolute faith, that improved classroom language teaching will stem from research. Investigation of second language classroom learning, they believe, will eventually and inevitably reveal solutions to the problems encountered in teaching second languages. Others, while less convinced, believe nonetheless that research is indispensable to understanding the learning process and the particular effects of formal instruction. Still others view research with thinly concealed skepticism. Such individuals maintain that difficulties with teaching second languages are practical concerns, essentially different from the issues to which research is generally directed. These individuals are as likely concerned with finding classroom space, arranging students' schedules, and securing cooperation in making second language classes available as with understanding why particular materials and activities seem to work or not.

Admittedly, research in second language teaching and learning offers little information about physical facilities, school management, and legislative lobbying. Furthermore, researchers in

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*This paper was presented under a different title at the First Midwest Regional TESOL Conference (held in conjunction with the Ninth Annual Convention of Illinois TESOL/BE), University of Illinois, Champaign-Urbana, April 3-4, 1981.

second language learning--most of whom, incidentally, are also teachers--will readily agree that such matters are not without importance. For this reason, it is urgent to clarify the aims of current research in classroom second language learning and teaching.

The research I have in mind has come to be known as "classroom-centered" research. Such research, which varies in form and investigates disparate aspects of the second language learning process (Bailey, in press), is based substantially--and in some cases entirely--on the observation and measurement of actual classroom activity (Long, 1980). Classroom-centered research seeks to increase our understanding of second language teaching and learning through its observation.

This approach has only recently become widely used. In the past, the procedure included randomly dividing a sample of learners into two or more groups. The control group would receive some standard form of instruction, while the experimental group(s) would receive instruction differing in one or more specifiable ways. The experimental treatment(s) might involve special materials or activities or a specific teaching technique. The difference between the groups was experimentally controlled.

Measures of learner performance on an evaluation instrument administered before and after the period of instruction would be obtained. Any differences in performance between the groups would be attributed to the differential treatment the groups received. Thus, the experimental treatment's efficacy could be tested under controlled conditions, with unambiguous results obtained.

This approach is far from obsolete. In fact, for many it remains the only genuinely useful approach investigating language learning. But exclusive use of such controlled investigation is methodologically unrealistic and conceptually premature.

The methodological difficulties characterize educational research in general. To illustrate them, let us imagine a study designed to test the hypothesis that the development of communicative proficiency in a second language is linked to the consistency with which learner errors are corrected in class by teachers. The experimental group in this study would be a class (or possibly several classes) in which only errors that interfere with comprehension are corrected. The control subjects would be taught in a class or classes in which **all** errors, those interfering with comprehension and those that do not, are corrected. The subjects' communicative proficiency would be measured before and after the instructional sequence. The results would presumably indicate the relative degree to which these different approaches to error correction had contributed to the development of communicative ability in a second language.[1]

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[1]The hypothetical study I have described bears certain resemblances to work by Hendrickson (1976; 1977) who investigated the relative effect of two approaches to error correction on written composition ability for adult learners of English as a Second Language (ESL). The most obvious difference--and in terms of the argument of the present paper, the most important--is that while the Hendrickson study (1976; 1977) involved error correction by the teacher outside the class, the hypothetical study would investigate error correction as it takes place during actual classroom interaction. The issue to be experimentally investigated in the hypothetical study has also been examined by Johnson (1980) in her descriptive study of four bilingual classrooms.

The study, then, is designed to examine the relative effect on the ability to communicate in a second language of two values of a single variable: classroom error correction. A study of the literature on language acquisition shows why such a study might appear well motivated. That teachers give greater attention to student errors than do ordinary speakers to individuals acquiring a language informally is for Krashen and Seliger (1975) a central issue. How error correction can be made maximally effective thus becomes a fundamental issue in second language learning research. Others (George, 1972; Hanzeli, 1975; Johansson, 1975; Powell, 1975) have argued that at the very least, errors that impair communication should receive priority over those that merely detract from the utterances' grammatical form. Burt (1975) argues that error correction directed selectively to those errors that interfere with communication may be more effective than an "all-out" approach to error correction, not only pedagogically but affectively as well. Empirical support for this position can also be found in first language acquisition research, which has repeatedly shown that adults are far more responsive to errors of fact and incomprehensibility than to purely linguistic errors.

Such a study, then, would investigate an issue important in a number of ways. The difficulties involved in conducting such a study, however, cannot be ignored. These difficulties would arise from the methodological problem of controlling classroom events in several different ways. How, for example, can the researcher ensure that the teacher(s) of the control group will, in fact, correct all errors? How can the researcher ensure, in

the case of the teacher(s) of the experimental group, that only errors that impair comprehension are corrected?[2] Indeed, how should the researcher define "error correction"? Should it be narrowly defined as teacher behavior that supplies the correct answer, or should it be defined as any behavior on the part of the teacher that, for one reason or another, enables the learners to recognize and rectify their errors? How can the investigator ensure that, despite the difference in error correction approaches, both the experimental and control groups will undergo an otherwise identical classroom language learning experience?

These questions can be answered. Nevertheless, such problems are extremely difficult to solve. Usually, such problems can only be satisfactorily resolved in a relatively small-scale study. The dilemma confronting the researcher is that small-scale studies that are methodologically manageable do not permit the kind of generalizations we seek to derive from controlled research. By contrast, large-scale attempts to compare methodologies (and that utilize sufficiently large and representative experimental and control groups) are often too large for control

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[2]The distinction between an error that impairs the communication of a message and one that merely produces an ungrammaticality is subjective. The distinction made by Burt and Kiparsky (1972) between "global" and "local" errors served as the theoretical base for the Hendrickson (1976; 1977) study (see footnote 1). However, as Burt and Kiparsky point out, communication impairment is not always the result of global errors alone; indeed, while they suggest that global errors may likely impair comprehension of a message more seriously than local errors, the distinction between the two error categories is based, not on the issue of comprehensibility but on syntactic criteria. Thus, how such a distinction can be made clear-cut for the investigator--let alone for the teacher(s)--is highly problematic.

over what takes place in the classrooms under study. Studies of this scope in the area of second language learning (Scherer and Wertheimer, 1964; Smith, 1970) have been plagued by this problem. Teachers presumably using the same approach differed considerably in their teaching behaviors, such that two experimental classes would differ only somewhat less than an experimental and a control class.

These difficulties persist in studies of classroom language learning effectiveness. In principle, however (that is, in a world with unlimited research funds, personnel, equipment, and expertise), they are not insurmountable. The methodological problems in research in classroom learning effectiveness are not the only pitfall of such research. There are also conceptual weaknesses to such studies that have come to light recently.

One such weakness is the assumption that the variables in classroom language learning are clear, that we know the factors on which successful second language learning hinges. But we do not. All we can say with any certainty is that successful classroom language learning--or second language acquisition, in general--involves a multiplicity of factors, some not yet identified. Experiments that attempt to link language learning achievement with a single variable--age intelligence, motivation, or method--are hopelessly simplistic.

Another fundamental weakness has been a simplistic view of individual variables: methods are either inductive or deductive, motivation is either instrumental or integrative, and syllabi are either structurally- or situationally-ordered. Clearly such dichotomies are a useful shorthand. But, to carry such distinc-

tions into hypothesis development and testing enormously limits research on language learning.

Classroom centered research, in contrast, proceeds from the premise that the second language learning and teaching act is a multivariate phenomenon, a process involving numerous variables, many as yet unidentified. It assumes also that the description of activities in the second language classroom is a prerequisite to research on second language learning effectiveness and that formal instruction's contribution to language acquisition cannot be studied without measuring actual classroom activity.

Classroom centered research principally investigates those things that experimental research has too often taken for granted or treated simplistically, for example, teacher treatment of learner errors. Essentially, classroom centered research in this area concerns what happens in second language classrooms when learners produce errors. First, a **description** of error treatment as it is directly observed must be made. Fanselow (1977) videotaped a sequence of oral drills taught by 11 different teachers. He tabulated and classified student errors in these 11 classes and teacher responses to these errors. Altogether, 16 different response types or "error treatments" were identified. Two of these 16 treatments lacked response to an error; the teacher either made no comment or acted as if the student's response had been correct by saying something like, "Yes, OK." The other 14 categories reflected a variety of responses to an error: among them, saying or gesturing "no" or "uh-uh," repeating the student's response with a rising intonation, or repeating the question or re-stating the task with no new information.

Twenty-two percent of the errors received no treatment; either the teachers did not perceive them, or they chose to ignore them. Fanselow (1977) also found that different kinds of errors were treated differently. Grammatical errors were least likely to be treated; by contrast, errors in content words (usually resulting in factually inaccurate responses) were almost universally treated.

The particular findings of Fanselow's study (1977) must be evaluated with care, first because the 11 classes and their teachers (as well as the oral drills conducted during the videotaped segments) cannot be fully representative of second language classes, teachers, and activities in general. The data gathered from descriptive research of this kind cannot form the basis of generalizations. Nonetheless, the description of error treatment that emerged from Fanselow's study (1977) is extremely interesting. That it has been labeled a description of error treatment, not error correction is significant. Fanselow's study provides empirical evidence that errors made in second language classrooms are not inevitably corrected. Indeed, almost a quarter of the errors made received no attention whatsoever. Overt correction of learner error occurred in only 15 percent of the cases observed. Additionally, the variety of treatments other than overt correction suggests that error treatment is itself a multi-dimensional phenomenon. From the initial question addressed by the Fanselow study--what happens in a second language classroom when a learner makes an error?--spring numerous other questions such as the following:

- Under what circumstances will an error be corrected? When will it be treated in some other way? When will it be ignored?
- Are there particular categories of errors with which particular error treatments appear to be closely associated? Are there categories that receive priority treatment? Are there categories that seem to go relatively unnoticed by the teacher or that they view as inconsequential?
- How immediately do second language teachers respond to learner errors? Is there variation in the interval between the production of an error by a learner and its treatment by the teacher? Under what circumstances is error treatment immediate?
- Who treats errors? Is it always the teacher who provides the treatment or do other learners participate in the process?
- Is error treatment a single phenomenon or are there recurrent cycles of error treatment that can be identified?
- Are errors treated similarly for all learners or do teachers respond differently to errors produced by different learners? Do learners respond uniformly to particular error treatments?

Such questions have been actively pursued by classroom centered researchers through descriptive studies of second language classroom activity. Methods of observation vary greatly. In some cases, observation requires the presence of a classroom observer who may also participate in the learning activities [this alternative has been widely adopted (Bailey, in press) for lan-

guage learner diary studies]. Observations may be recorded through field notes or one of the coding systems developed or adapted specifically for use in second language classrooms (Long, 1980). In other cases, mechanical observation and data collection is accomplished through audio- or videotaping classroom activity. Other studies use a combination of observation and data-gathering techniques.

Other studies (Holley and King, 1971; Allwright, 1975; Lucas, 1975; Chaudron, 1977; Long, 1977; Johnson, 1980; Salica, 1981) using direct observation of the second language classroom through one or more of the methods previously outlined show that error treatment is not a single variable but a complex of several variables. With findings by Cathcart and Olsen (1976), which suggest that learners themselves vary in their preferences concerning teacher feedback, and numerous investigations of variation among learners in affective factors and learning styles, we see the limitations inherent in a univariate comparison of error treatment approaches.

Three vital roles played by non-experimental investigations of the second language classroom become apparent. The first, already discussed, is to identify variables whose importance for classroom second language learning we will want to investigate experimentally. Identification of such variables is essential to hypothesis development. In some cases, descriptive research of the classroom will confirm our intuitions or add to anecdotal evidence about the variables in second language learning; much of the data collected by the above studies of error treatment fall into this category. In other cases, direct observation and anal-

ysis of the second language classroom will reveal new dimensions of classroom learning and teaching activity. Diary studies and other ethnographic research do this particularly well.

A second and somewhat related role of classroom centered research is to inform us of the unique character of this setting. Classroom centered research is seen by many as a data-gathering activity, which will enable us to develop more satisfactory answers to the following fundamental questions. How does the activity of the second language classroom differ from other settings in which interaction between second language learners and others take place? In what ways does the behavior of the language teacher differ from that of other speakers of the target language? What kinds of topics are discussed? To basic questions such as these, we have at present surprisingly incomplete answers.

Studies on error treatment form one area of research attempting to clarify the distinctive character of formal instruction in a second language. Other research on classroom discourse has made equally important strides in this direction. Such research, when completed by empirical investigations of interactions between second language learners and proficient language speakers outside the classroom, is indispensable to understanding the contribution of formal instruction to the second language acquisition process.

A third role that classroom centered research plays is the development of new conceptualizations of the second language classroom. Development of alternative views of classroom activity is the most radical of the three functions, since our fundamental orientation toward the classroom determines the events

choose to observe. A full consideration of this function of classroom research is beyond the scope of this paper.

It should be noted that the view of the classroom largely guiding second language classroom research is of an interaction between two fundamentally different kinds of participants--teachers and learners. They interact purposefully, according to this view; and this participation is determined by the syllabus chosen. This conceptualization has much to recommend it, but it is not the only possibility.

One alternative has been proposed by Allwright (1978; 1981) who argues for a "management" view of the classroom in which teacher and learners are engaged in a cooperative enterprise or management task: namely, the management of language learning. Allwright (1978; 1981) contends that the classroom process can be viewed as involving decision-making, organizing, implementing actions, and evaluations. These management tasks are evident, he claims, at all levels of analysis, from the level of national language planning to that of language error treatment.

Our concern here is not with the merits of this alternative view but that it has emerged in part from Allwright's (1978; 1981) investigation of classroom activity. Observation and analysis of the second language classroom is thus a potential source of such alternate conceptualizations.

We expect to derive not a set of answers or a series of recommendations for effective second language teaching. Rather, such research will enable us to ask better questions. Thus, the immediate goal is a fuller understanding of the second language classroom. Our ultimate goal is development of a theory of sec-

ond language learning. For the present, it is impossible to draw generalizations upon which language teachers can fully rely. Those studies that have investigated the relationship between observed classroom events and second language achievement--for example, studies by Politzer (1970) and Hamayan and Tucker (1980)-- have found no direct correlation between individual teacher behaviors and learner achievement. Such studies provide empirical evidence of the complexity of the second language classroom. Further, they show that implications for development of a theory of second language learning are impossible to forsee at this time.[3]

Second language teachers may be using highly effective methods. Classroom teachers should certainly not suspend all judgment on such matters. In the future, research may indeed enable us to confirm judgments currently made about the effectiveness of classroom practices. For the present, an indispensable task of second language classroom research is to describe and characterize those practices. For this reason, it is not at all unreasonable to suggest that second language classroom teaching will have implications for research in second language learning.

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[3]The Politzer study (1970) is particularly important in this regard. His analysis of the relationship between various classroom behaviors of 17 teachers of French and their students' achievement in French suggests that almost no teaching behavior is intrinsically "good" or "bad." Rather, "most teaching activities undertaken by a language teacher in a language class have probably some value; but each activity is subject to what might be called a principle of economics. Each activity consumes a limited resource--namely time. Thus the value of each activity depends on the value of other activities which might be substituted for it at a given moment" (p. 41).

REFERENCES

Allwright, Richard L. "Abdication and Responsibility in Language Teaching." Paper presented at the Berne Colloquium on Applied Linguistics, May, 1978.

_____. "Classroom Research and the Management of Language Learning." Unpublished manuscript, 1981.

_____. "Problems in the Study of the Language Teacher's Treatment of Learner Error," **On Tesol '75: New Directions in Second Language Learning, Teaching, and Bilingual Education**, eds., Marina K. Burt, and Heidi C. Dulay. Washington, D. C.: TESOL, 1975, pp. 96-109.

Bailey, Kathleen M. "Classroom-Centered Research on Language Teaching and Learning," **Essays for Language Teachers**, ed., Marianne Celce-Murcia. Rowley, Massachusetts: Newbury House, in press.

Burt, Marina K. "Error Analysis in the Adult ESL Classroom," **TESOL Quarterly**, IX, No. 1 (1975), 53-63.

_____, and Carol Kiparsky. **The Gooficon: A Repair Manual for English**. Rowley, Massachusetts: Newbury House, 1972.

Cathcart, Ruth L., and Judy E. W. B. Olsen. "Teachers' and Students' Preferences for Correction of Classroom Conversation Errors," **On TESOL '76**, eds., John F. Fanselow, and Ruth H. Crymes. Washington, D. C.: TESOL, pp. 41-53.

Chaudron, Craig. "Teacher Priorities in Correcting Learner Errors in French Immersion Classes," **Working Papers on Bilingualism**. No. 12. Toronto, Ontario, Canada: Ontario Institute for Studies in Education, 1977.

Fanselow, John F. "The Treatment of Error in Oral Work," **Foreign Language Annals**, X, No. 6 (1977), 583-593.

George, H. V. **Common Errors in Language Learning**. Rowley, Massachusetts: Newbury House, 1972.

Hamayan, Else V., and G. Richard Tucker. "Language Input in the Bilingual Classroom and Its Relationship to Second Language Achievement," **TESOL Quarterly**, XIV, No. 4 (1980), 453-466.

Hanzeli, Victor E. "Learner's Language: Implications of Recent Research for Foreign Language Instruction," **Modern Language Journal**, LIX, No. 8 (1975), 426-432.

Henrickson, James M. "The Effects of Error Correction Treatments Upon Adequate and Accurate Communication in the Written Compositions of Adult Learners of English as a Second Language." Unpublished PhD dissertation, Ohio State University, 1976.

_____. **Error Analysis and Selective Correction in the Adult ESL Classroom: An Experiment.** U.S., Educational Resources Information Center, ERIC Document ED 135 260, 1977.

Holley, Freda M., and Janet K. King. "Imitation and Correction in Foreign Language Learning," **Modern Language Journal**, LV, No. 8 (1971), 494-498.

Johansson, Stig. "The Uses of Error Analysis and Contrastive Analysis," **English Language Teaching**, XXIX, No. 4 (1975), 330-336.

Johnson, Nancy K. "Teacher-Student Interaction in Bilingual Classrooms: Four Approaches to Error Feedback." Paper presented at the 14th Annual TESOL Convention, San Francisco, California, March, 1980.

Krashen, Stephen D., and Herbert W. Seliger. "The Essential Contributions of Formal Instruction in Adult Second Languge Learning," **TESOL Quarterly**, IX, No. 2 (1975), 173-183.

Long, Michael H. "Inside the 'Black Box': Methodological Issues in Classroom Research on Language Learning," **Language Learning**, XXX, No. 1 (1980), 1-42.

_____. "Teacher Feedback on Learner Error: Mapping Cognitions," **On TESOL '77: Teaching and Learning English as a Second Language: Trends in Research and Practice**, eds., H. Douglas Brown, Ruth H. Crymes, and Carlos A. Yorio. Washington, D. C.: TESOL, pp. 278-294.

Lucas, E. "Teacher's Reacting Moves Following Errors Made by Pupils in Post-Primary English as a Second Language Classes in Israel." Unpublished MA thesis, Tel Aviv University, 1975.

Politzer, Robert L. "Some Reflections on 'Good' and 'Bad' Language Teaching Behaviors," Language Learning, XX, No. 1 (1970), 31-43.

Powell, Patricia. "Moi Tarzan, Vous Jane? A Study of Communicative Competence," Foreign Language Annals, VIII, No. 1 (1975), 38-42.

Salica, Christine. "Testing a Model of Corrective Discourse." Paper presented at the 4th Annual Colloquium on Classroom Centered Research, 15th Annual TESOL Convention, Detroit, Michigan, March, 1981.

Scherer, George A. C., and Michael Wertheimer. A Psycholinguistic Experiment in Foreign Language Teaching. New York: McGraw-Hill, 1964.

Smith, Philip D. A Comparison of the Cognitive and Audiolingual Approaches to Foreign Language Instruction. The Pennsylvania Foreign Language Project. Philadelphia, Pennsylvania: Center for Curriculum Development, 1970.

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